REMARKS

This paper is presented in response to the final official action dated December 17, 2008. Claim 1 has been amended to recite that the metal oxide is selected from one member of the group consisting of ZrO_2, HfO_2, TiO_2, and Al_2O_3, undoped or optionally doped with one or more dopants selected from the group consisting of CeO_2, CaO, MgO, Sc_2O_3, and Y_2O_3. Support for the amendments is found in the original specification, for example in Example 3 on page 13, lines 26-36, on page 14, lines 1-7, and in original claim 2. Conforming amendments have been made to 65-67. No new matter has been added, and claims 62-77 remain pending.

Specification

The official action suggests that the title is too long and needs to be shortened. The Office is directed to the amendment to the title submitted on October 11, 2006. Entry of the amendment is requested.

Claim Interpretation

Under the heading "Claim Interpretation" the official action alleges that the "oxides phases are also different oxides," citing to page 6 of the response filed on November 18, 2009, and the portion of the specification quoted therein. This interpretation conflicts with the facts of record. This interpretation is also contrary to the law governing claim interpretation.

It appears that the Office has misunderstood the applicants' argument in the response filed on November 17, 2009. In quoting from the specification's page 7, lines 9-11, at page 6 of the response, the argument was (and the specification says) that it is "possible" to make the first metal oxide powder out of a different metal oxide than the second nanoscale metal oxide powder. Even the office's characterization of the argument is that the phases "may be different." It is not clear how the Office concludes from these statements of possibility that the claims were limited to the oxide phases being different oxides. This interpretation is not correct.

Furthermore, the law requires that "[d]uring patent examination, the pending claims must be 'given their broadest reasonable interpretation consistent with the specification.'" MPEP 2111, citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005). The limiting interpretation described in the official action is not the

broadest reasonable interpretation consistent with the specification – it is entirely inconsistent with the specification, as described above.

In view of the foregoing, the Office's interpretation of the claims cannot be maintained. If the interpretation is not withdrawn, then clarifying explanation and an opportunity to respond are respectfully requested.

Furthermore, the original specification also describes that the oxide phases may also be composed of the same metal oxide (as originally disclosed in the examples on pages 12 to 14, especially in Example 3 on page 13, lines 26 to 36 and on page 14). Consistent with that alternative, which was a part of the previously-presented claim, the present claims have now been amended to require that the two phases have the same metal oxide.

Claim Rejections Under 35 USC § 112, ¶2

Claims 61-77 were rejected under 35 USC § 112, ¶2, as indefinite. The official action states,

> Applicants argue the ceramic material of the claims includes two separate phases however the claims allow for one phase with the limitation "the metal oxides are selected from one or more members." If two different phases the claim would require "two or more."

The applicants respectfully submit that the Office has misinterpreted the claims.

It is explicitly stated on page 10, lines 10 to 16, of the filed description, that: "The **ceramics** that can be made from the bimodal metal oxide powders according to the invention generally have a bimodal particle size distribution, whereby (1) **a first phase comprises a metal oxide having an average particle size of at least 250 nm**; and (2) **a second phase comprises a metal oxide having an average particle size of 25 nm to 250 nm**."

The two different phases according to the present invention and in the sense of the present invention are thus actually characterized **only** by different and specific particle size ranges corresponding to grain size ranges. The terms phase/phases are therefore also only used in the sense of the present invention thorough the application to designate parts of the

ceramic according to the present invention with specific and different particle size ranges corresponding to grain size ranges irrespective from the metal oxide composition.

There is thus no reason for the interpretation given by the Office that the phases have to be made of different metal oxides.

Furthermore, the originally-filed description explicitly discloses a ceramic according to the present invention, wherein both phases are made of the same metal oxide, in the examples on pages 12 to 14 (especially in Example 3 on page 13, lines 26 to 36 and on page 14).

It is thus actually explicitly desired that the claims allow two phases differing by ranges for the grain sizes but made of one and the same metal oxide (see also the originally filed claim 2).

To set the ceramics according to the present invention apart from the art cited and to clarify the claims even further especially concerning this point, the limitation in the claims is now explicitly changed from "wherein the metal oxides are selected from one or more members of the group consisting of ZrO_2, HfO_2, TiO_2 and Al_2O_3. . ." to "wherein the metal oxide is selected from one member of the group consisting of ZrO_2, HfO_2, TiO_2 and Al_2O_3. . . ."

In view of the foregoing reconsideration and withdrawal of the rejection are requested.

Claim Rejections 35 USC § 102 and 103

Claims 62-65 and 68-77 were rejected under "35 USC § 102(a or e)" as anticipated by or, in the alternative, under 35 USC § 103(a) as obvious over Nawa et al. U.S. Patent No. 7,012,036.

The Nawa et al. '036 patent is not available under 35 USC § 102(a).

The claims have been amended. Amended independent claim 62 now recites:

> A ceramic or dental material or dental product comprising a ceramic, having a bimodal particle size distribution, whereby a first phase comprises a metal oxide having an average particle size of at least 250 nm, and a second phase comprises a metal oxide having an average particle size in a range of 25 nm to 250 nm; made from a bimodal metal oxide powder comprising (a) a first metal oxide powder, and (b) a second, nanoscale metal oxide powder; wherein the first

> metal oxide powder has a d_{50} value in a range of 0.2 μm to 12 μm, and the second nanoscale metal oxide powder (b) has a d_{50} value in a range of 10 nm to 200 nm; wherein the size ratio of the d_{50} values of (a) to (b) lies at a maximum of 40 to 1; wherein the quantity ratio of (a) to (b) is in a range of 0.1:99.9 to 99.0:0.1; and wherein the metal oxide is selected from one member of the group consisting of ZrO_2, HfO_2, TiO_2, and Al_2O_3, undoped or optionally doped with one or more dopants selected from the group consisting of CeO_2, CaO, MgO, Sc_2O_3, and Y_2O_3.

The new claims now explicitly and clearly require the **ceramic** and thus the sintered body to have a bimodal particle size distribution. Moreover, they now also require that the "metal oxide is selected from **one** member of the group consisting of ZrO_2, HfO_2, TiO_2 and Al_2O_3".

These features of the amended claims clearly exclude ceramics comprising two parts/types of grains (referred to as "phases" by the official action) characterized by being made of different metal oxides from the scope of the new claims, since the claims are limited to the use of only one selected metal oxide.

All these special features of the ceramics according to the present invention set these ceramics apart from the ceramics cited. While being features of the actual ceramic, these features thereby result from using a metal oxide powder with a bimodal particle size distribution for producing the ceramics according to the present invention.

None of the ceramics cited by the Office comprise **only one** metal oxide, while still comprising a bimodal size distribution **and** two phases (in the sense of the present invention) with specific particle size/grain size ranges for each phase.

Actually, all ceramics cited by the Office comprise at least two different metal oxides, whereby each metal oxide has a specific particle size/grain size range. Nawa et al. and EP 435677 thereby teach ceramics comprising both zirconia grains and alumina grains.

These ceramics are however now clearly and explicitly excluded by the limitation of the new claims.

None of the ceramics cited by the Office comprise **only one** metal oxide, while still comprising a bimodal size distribution **and** two phases with specific particle size/grain size ranges for each phase like the ceramics according to the present invention.

The ceramics according to the present invention have thus to be considered as novel compared to the art cited by the Office.

Furthermore, none of the documents of the prior art indicates that the combination of features according to the present invention may be useful and/or desired to strengthen the ceramic. The ceramics according to the present invention have thus to be considered as nonobvious compared to the art cited by the Office.

Conclusion

Reconsideration and withdrawal of the pending rejections in view of the foregoing arguments and amendments are respectfully requested. It is thus respectfully requested to issue a granted patent on the basis of the new claims. Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is urged to telephone the undersigned attorney at the indicated number.

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Respectfully submitted,

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